

WHAT IS CLAIMED IS:

1. A method for welding a flexible flat cable (1) to a member (2), the flat flexible cable (1) having a conductive element (4) covered on opposite first and second sides by an insulation coating (5), comprising:

stripping part of the insulation coating (5) from the first side of the flexible flat cable (1) for exposing a section of the conductive element (4);

introducing the flexible flat cable (1) and the member (2) between a horn (7) and an anvil (6) of an ultrasonic welding machine (3) so that the exposed section of the conductive element (4) is held substantially in contact with the member (2), the horn (7) having a press-contact surface with a plurality of elongated projection (9);

pressing the elongated projections (9) into contact with the insulation coating (5) on the second side of the flexible flat cable (1); and

transmitting an ultrasonic vibration to the horn (7) for causing the elongated projections (9) to bite into the insulation coating layer (1) and substantially into contact with the conductive element (4) for ultrasonically welding the conductive element (4) to the member (2).

2. The method of claim 1, further comprising aligning the flat flexible cable (1) substantially parallel to the elongated projections (9).

3. The method of claim 1, further comprising stripping part of the insulation coating (5) from the second side of the flexible flat cable (1) to define a non-stripped portion (5a) and a stripped portion (5b) on the second side of the flexible flat cable (1), and pressing the horn (7) into contact with both the non-stripped portion (5a) and the stripped portion (5b) to weld the conductive element (4) ultrasonically to the member (2).

4. The method of claim 1, wherein slits (10) are formed in the respective elongated projections (9) on the press-contact surface of the horn (7) to make the elongated projections discontinuous substantially along a longitudinal direction of the flexible flat cable (1).

5. The method of claim 1, wherein the insulation coating (5) is stripped from the first side of the flexible flat cable (1) for a distance slightly longer than a length (L) of the horn (7).

6. A horn of an ultrasonic welding machine (3) for ultrasonically welding a flexible flat cable (1), the horn (7) having a press-contact surface with a plurality of elongated projections (9) of tapered cross section for pressed contact with the flexible flat cable (1).

7. The horn of claim 6, wherein the elongated projections (9) are substantially parallel.

8. The horn of claim 7, wherein slits (10) are formed in the respective elongated projections (9) to make the elongated projections (9).

9. The horn of claim 8, wherein the discontinuous elongated projections (9) have an extension between about 0.3 mm and about 1 mm.

10. The horn of claim 9, wherein the discontinuous elongated projections (9) have an extension of between about 0.4 mm and 0.7 mm.

11. The horn of claim 6, wherein the press-contact surface of the horn (7) comprises an elongated projection area where the plurality of elongated projections (9) are provided and a protrusion area where a number of protrusion (14) having a tapered cross are provided.

12. The horn of claim 10, wherein a projecting distance of the protrusions (14) is longer than a projecting distance of the elongated projections (9) by a distance corresponding to about a thickness of insulation coating (5) on the flexible flat cable (1).

13. The horn of claim 6, wherein the elongated projections (9) have a substantially acute-angled isosceles triangular cross section.